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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/00959

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC: E01C3/06 E02D27/35 F16L1/026

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E01C E02D F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 279 334 A (QUARTARARO JACK M) 18 October 1966 (1966-10-18) column 1, line 68 - column 2, line 12; figure	11-19
A	US 4 464 082 A (ISAACS RALPH M) 7 August 1984 (1984-08-07) column 5, line 60 - column 6, line 4; figure 7	5, 6, 19
Y	US 3 839 518 A (SUNDQUIST D ET AL) 1 October 1974 (1974-10-01) column 4, line 60 column 6, line 53 - line 58; figure 5 -/-	1-10

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

3 September 2003

Date of mailing of the international search report

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/00959

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 016, no. 169 (M-1239), 23 April 1992 (1992-04-23) & JP 04 015381 A (KUBOTA CORP), 20 January 1992 (1992-01-20)	1-10
A	abstract	19
A	US 3 822 955 A (HAERKAMP H ET AL) 9 July 1974 (1974-07-09) column 3, line 44 - column 4, line 13; figure 2	1,8
A	US 4 167 356 A (CONSTANTINESCU VICTOR) 11 September 1979 (1979-09-11) column 2, line 49 - line 53; figures	1,7,14
A	EP 1 002 903 A (NAKAMURA BUSSAN CO LTD) 24 May 2000 (2000-05-24) abstract	18

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 03/00959

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3279334	A	18-10-1966	NONE	
US 4464082	A	07-08-1984	CA 1215848 A1	30-12-1986
			FI 841852 A ,B,	14-11-1984
			FI 841917 A	14-11-1984
			GB 2139730 A ,B	14-11-1984
			NO 841883 A ,B,	14-11-1984
			SE 464259 B	25-03-1991
			SE 8402311 A	14-11-1984
US 3839518	A	01-10-1974	CA 990898 A1	08-06-1976
JP 04015381	A	20-01-1992	NONE	
US 3822955	A	09-07-1974	DE 2106723 A1	24-08-1972
			BE 779125 A1	30-05-1972
			CA 966709 A1	29-04-1975
			FR 2126852 A5	06-10-1972
			GB 1375482 A	27-11-1974
			IT 948411 B	30-05-1973
			LU 64634 A1	26-06-1972
			NL 7200992 A	15-08-1972
US 4167356	A	11-09-1979	AU 7475874 A	29-04-1976
			FR 2289676 A1	28-05-1976
EP 1002903	A	24-05-2000	JP 2980604 B2	22-11-1999
			JP 2000154550 A	06-06-2000
			EP 1002903 A1	24-05-2000
			US 6318031 B1	20-11-2001

Form PCT/ISA/210 (patent family annex) (July 1992)